

The irregular CO₂ variation observed, especially from February to August, had a high correlation with the air mass exchange by synoptic scale weather disturbances.

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MEASUREMENTS OF THE ATMOSPHERIC MINOR CONSTITUENTS AT SYOWA STATION, ANTARCTICA, IN 1986 (II) (ABSTRACT)

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Ground-based observations for the solar spectra were carried out to determine the column amounts of the minor constituents at Syowa Station, Antarctica in 1986. Solar spectra were measured within the spectral region from 400 to 5000 cm⁻¹ by a Fourier transform infrared spectrometer (FTIR) whose resolution is 0.125 or 0.25 cm⁻¹. Column amounts of the gaseous constituents were determined by comparing observed equivalent widths with theoretical calculations.

The total H₂O obtained by FTIR observations agreed with the results of radiosonde soundings within the observational error. The temporal variation of the total O₃ obtained by FTIR observations was quite similar to the result obtained by the Dobson spectrometer. Rapid increase of the total O₃ accompanied by the stratospheric sudden warming was clearly observed on October 21. The temporal variations of the total N₂O, CH₄ and CO₂ were also found. We examined the relation between the variations of the total column amounts and the meteorological elements. Correlation between the total column amounts of N₂O, CH₄ and CO₂ and the thickness of tropospheric air mass was quite good.

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SULFUR COMPOUNDS OF PHYTOPLANKTON ORIGIN IN THE ATMOSPHERIC BOUNDARY-LAYER (ABSTRACT)

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A box model was made to understand how dimethylsulfide (DMS or CH₃SCH₃), released from the ocean surface to the atmosphere, contributes to produce background aerosol particles